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CHARACTERISTICS OF MEDICALLY DISQUALIFIED AIRMAN APPLICANTS IN CALENDAR YEARS 1977 AND 1978

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# CHARACTERISTICS OF MEDICALLY DISQUALIFIED AIRMAN APPLICANTS IN CALENDAR YEARS 1977 and 1978

# INTRODUCTION

The Federal Aviation Administration (FAA) and its predecessors have been charged with the responsibility for medical certification of all United States and some international civil airmen since 1926. Except for certain categories of airmen such as glider and balloon pilots, each airman must hold a current corresponding class of medical certificate for performing the duties of any pilot certificate he may possess. Federal Aviation Regulations stipulate that a first-class physical examination must be performed at 6-month intervals for duties requiring an air transport pilot certificate; a second-class physical examination must be performed annually for duties requiring commercial pilot certificate, an air traffic control tower operator certificate, etc.; and a third-class physical examination must be performed at 2-year intervals for duties requiring a private pilot certificate. Different medical standards apply to the different categories of medical certification.

Medical certification criteria will continue to change as a result of the evolution of aviation medicine and increased efforts in the area of aeromedical research.

Previous studies (1-4) that provided descriptive data concerning airmen who were denied medical certification have proved to be of great value. Numerous questions have been answered for the FAA and the aviation community concerning these airmen. Comprehensive data reflecting pertinent denial rates with respect to the medical and general attributes of those airmen denied medical certification are needed for program monitoring with respect to workload information, aeromedical standards, appeal system appraisal, research direction, and risk determinations by the aviation community. Of course, the primary purpose of these efforts continues to be the promotion and enhancement of aviation safety through medical program data analysis.

This study provides comprehensive data reflecting pertinent denial rates with respect to the medical and general attributes of those airmen denied medical certification in calendar years 1977 and 1978. Comparisons to previous findings are also made.

Also provided are such descriptive epidemiologic data as age, sex, occupation, class of medical certificate applied for, total flying time, and cause-specific annual denial rates for medically disqualified applicants.

# METHODS AND SOURCE

The Aeromedical Certification Branch of the Civil Aeromedical Institute is the central screening facility and repository within the FAA for the collection, processing, adjudication, investigation, and analyses of medical data generated by the aeromedical certification and related regulatory programs.

The Aeromedical Certification Branch's computerized medical records provide historical data both for daily screening of document input and for statistical/research purposes. The "active master file" contains the most recent record within the past 3 years of an airman's medical application for certification. This file includes applications issued, pending, or denied and abbreviated records of significant pathology cases retained indefinitely for further medical reference in the event an inactive airman decides to again exercise his or her flying privilege.

The denial data were obtained from computer files as of July 1, 1978, for calendar year (CY) 1977 applicants and July 1, 1979, for CY 1978 applicants. The 6-month time lapse was allowed to insure that final certification action had been taken in the majority of cases. The data were summed for the 2 calendar years to provide a larger group for comparison with the active airman population.

A medically certified airman is considered "active" for a maximum of 24 calendar months following the most recent FAA medical examination; i.e., regardless of the class of medical certificate issued, it is valid for third-class purposes for 24 months unless otherwise limited or recalled by the FAA.

The active airman population as of December 31, 1977, was used as the population base for rate computation. This population was used since it is the midpoint for the denied applicant group.

Data from the most recent medical record were selected and extracted from the active master file for construction of the various frequency tables presented in this study.

Data presented are descriptive in nature, and appropriate population comparisons are made via conventional statistical methodology where compatible data exist and statistical treatment would be meaningful.

Annual rates were computed to provide data more useful for answering the many questions received concerning airmen denied medical certification. In CY 1977 and 1978, 11,107 airmen were denied medical certification for various medical and/or administrative reasons; e.g., failure to provide additional medical information. The frequency tables that follow were compiled based on data extracted from these airmen's medical records and comparable data extracted from the active population as of December 31, 1977. The active population at that time totaled 811,588 airmen.

A copy of the application for medical certification is provided for reference to block numbers cited in the following discussion (Figures la and lb).

Age of denied airmen was computed to last birthday as of the date of the physical examination. Age of the active population airmen was computed to last birthday as of December 31, 1977. Date of birth is provided by the airmen in block 3 of the medical application form, and computer edits insure a reasonable month, day, and year.

Class of certificate applied for is determined from information supplied by the applicant in blocks 9A and 9B (Class of Medical Certificate Applied For and Type of Airman Certificate(s) Held) of the application.

In many areas, accuracy of data is contingent upon the completeness and accuracy of information supplied by the airman applicant. Other data are coded by Aeromedical Certification Branch personnel. Some human error is recognized but is not considered significant enough to seriously bias the data provided in this study.

Some airmen who hold first-class certificates will have applied for medical certification four times during the 2-year period, some airmen who hold second-class certificates will have applied twice, and airmen with third-class certificates will have applied once. However, rate data are provided for the number of applicants versus the number of applications, except for a portion of Table I. The active master file provides applicant data because it contains only the most recent examination of an airman. Both the denial data and the population data are maintained on the active master file.

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Figure 1a. FAA Form 8500-8 (front) - Application for Medical Certification.

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Figure 1b. FAA Form 8500-8 (back) - Report of Medical Examination.

Occupation is coded from information furnished by the applicant in block 10 of the application form. Only aeronautical occupations are coded for input to the automated system. If the item is left blank by the applicant and cannot be determined from other information provided on the examination, the occupation is entered as "nonaeronautical."

The cause for denial was determined by the presence of an alpha prefix to a specific pathology code. The prefix and code are assigned by medical review clerks in the Aeromedical Certification Branch. Internal computer edits insure logical assignment of such prefixes and pathology codes. These edits are applied when initial file maintenance to an airman's record is made and again at the end of each quarter to eliminate discrepancies in pathology and denial data on the active master file. Data presented regarding pathology represent conditions cited as cause for denial, not applicants. Some airmen denied medical certification for legal or administrative reasons or for failure to provide additional medical information would not necessarily have a pathology code assigned. There are also airmen who are denied for more than one cause.

#### FINDINGS AND DISCUSSION

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#### A. General Comments

As of December 31, 1977, there were 811,588 active airmen in our automated system; 85,593 held first-class medical certificates, 310,238 held second-class certificates, and 415,757 held third-class certificates. In CY 1977 and 1978, 11,107 airmen were denied medical certification. The annual denial rate based on airman applicants is, therefore, 6.8 per 1,000 airmen. During the same 2-year period, 1,094,873 FAA physical examinations were performed giving a denial rate per 1,000 applications of 10.1.

The annual rate per 1,000 applicants is 4.3 for first-class, 4.9 for second-class, and 8.9 for third-class certification.

In the previous study of CY 1975-1976 applicants (3) the denial rate per 1,000 applicants was 7.9 and the rate per 1,000 applications was 10.2. It would appear that the per-applicant denial rate is declining. However, this could, in part, be attributed to a change in processing "pending" applications on which no additional information is received. In November 1975,

an automated procedure was implemented which assigns a denial class code to these "pending" records after 25 months from date of examination. Additionally, air traffic controller (second-class) denials are down substrainably from 18.1 in the 1978 report to 10.4 in this report.

# B. Age Distribution of Denied Airmen

Tables I and II reflect the age distribution and agespecific denial rates by class-applied-for. Table I shows that airmen applying for third-class certificates account for 66 percent of all denials, with second-class applicants accounting for 27 percent and first-class applicants only 7 percent.

Denial rates by class-applied-for also indicate that the highest crude rates for denials are applicants for third-class medical certification (general aviation/private or student airmen) with an annual denial rate of 8.9 per 1,000 applicants. Occupationally connected airmen require first- and second-class medical certificates, and denial rates for these categories (4.3 and 4.9 per 1,000 applicants respectively) are substantially lower than the general aviation (third-class) category or the total population denial rate (6.8 per 1,000 applicants). In the 1978 study, denial rates by class-applied-for were 10.2 for third class, 6.0 for second class, 4.3 for first class, and 7.9 for the total denial population.

Airmen may apply for and obtain any class of medical certificate for which they qualify; however, most new applicants apply for third-class medica' certification, consistent with their intended use of the certificate. First- and second-class medically certified airmen are more likely to be occupationally connected airmen, on either a full-time or part-time basis. As such, these airmen are, to some extent, medically purged and denial rates for these two classes are more likely to reflect incidence rather than prevalence of disqualifying pathology among a more stable numerical group. Many applications for third-class medical certificates are from new applicants whose medical status has not been previously appraised by the FAA (as many as 200,000 examinations performed during those years). Only 3 percent of all first-class examinations and 9 percent of all second-class examinations performed are for new applicants. Therefore, the substantially higher denial rate for the third-class group more likely results from a combination of prevalence and incidence of disqualifying pathology than from any recognizable epidemiologic factor. New applicants account for approximately 22 percent of the total applicants for medical certification.

TABLE I. CY 1977 and 1978 DENIED APPLICANTS BY AGE AND CLASS OF MEDICAL CERTIFICATE APPLIED FOR

	First	Second	Third	
Age	Class	Class	Class	Total
Less than 20	15	55	231	301
20-24	34	332	536	902
25-29	37	463	613	1,113
30~34	54	281	644	979
35~39	63	253	610	926
40~44	66	295	710	1,071
45~49	86	355	1,012	1,453
50~54	155	368	1,190	1,713
55~59	180	368	879	1,427
60-64	28	152	557	737
65-69	7	67	259	333
70 and over	4	23	125	152
Total Denied	729	3,012	7,366	11,107
Percent of Total Denied	6.6	27.1	66.3	100.0
Total Issued -				
1977 and 1978*	211,765	428,270	440,082	1,080,117
Percent of Total				
Applicants Issued	19.6	39.7	40.7	100.0
Total Applications				
1977 and 1978*	212,860	432,306	449,707	1,094,873
Denial Rate per				
1,000 Applications	3.4	7.0	16.4	10.1
Total Applicants**	85,593	310,238	415,757	811,588
Annual Denial Rate per				
1,000 Applicants	4.3	4.9	8.9	6.8
Mean Age of				
Denied Airmen***	46.2	41.1	44.2	43.5
Mean Age of Active				
Population Airmen***	38.1	37.1	36.5	36.9

<sup>\*</sup>Examination Computer Submission Summary Reports, RIS: AC 8500-3, Calendar Years 1977 and 1978.

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<sup>\*\*</sup>Examination Time Period Summary, RIS: AC 8065-4, December 31 1977.

<sup>\*\*\*</sup>Age as of the date of examination to last birthday.

<sup>\*\*\*\*</sup>Age at last birthday as of December 1, 1977.

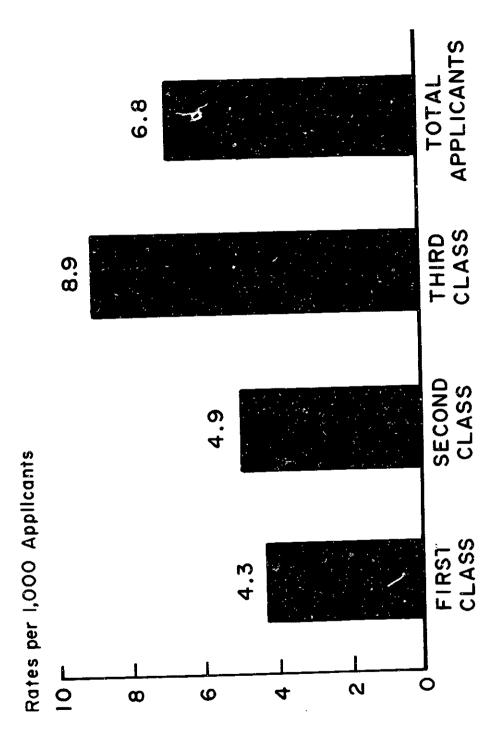


Figure 2. Annual denial rates by class of medical certificate applied for, 1977-1978.

Also shown in Table I and Figure 3 are the mean ages for the three class-applied-for denial groups and the three classissued population groups. First-class airmen were oldest (denied airmen--46.2, active--38.1); third-class airmen were the next oldest (denied airmen--44.2, active airmen--36.5); and second-class airmen were the youngest (denied airmen--41.1, active airmen--37.1). The mean age for all denied applicants was 43.5, compared to a mean age of 36.9 for the active airman population. Denied airmen's average age was 6½ years older than the active population airmen's average age.

Table II reflects similar age trends by class of medical certificate; however, age-specific rates were higher for second class over first class and third class over both first and second classes. Overall, the age-specific denial rates for the younger age intervals were higher than the 30-34 and 35-39 age intervals (Figure 4). Again, this is attributed to new applicants who had not been previously screened by the FAA.

# C. Occupations of Denied Airmen

The majority of denied airmen are not occupationally connected with aviation (See Table III). Eighty-five percent of all denied airman applicants indicated nonaeronautical occupations on their applications. These applicants yield an annual denial rate of 7.0 per 1,000 applicants. The largest denial percentages of applicants occupationally connected to aviation was the 7 percent among air traffic controllers at centers/ towers (ATCS). This category also experienced the highest overall annual denial rate (10.4 per 1,000 applicants). Of these occupationally connected airmen, air traffic controllers at flight service stations, flight navigator/radio operators, flight engineers, and self-employed commercial pilots had the next highest rates (6.8, 6.8, 6.2, 5.9 respectively). Airline pilots had the sixth highest rate of 4.6 per 1,000 applicants. (See Table III and Figure 5). Only 3 percent of the total denials were in the airline pilot occupation category. All of the other occupation categories combined represent less than 5 percent of total denials.

These findings are consistent with previous experience as to denial data by occupation (4), except that the denial rate for air traffic controllers decreased from an annual rate of 18.1 to 10.4 and the air traffic controller at flight service station rate decreased from 18.6 to 6.8. These decreases are due, at least in part, to the repeal of the second-career legislation. Some of the decrease could be attributed to a backlog in air traffic controller examination processing at the time of the July 1979 computer run.

TABLE II. AGE DISTRIBUTION COMPARISON -- ACTIVE AIRMEN VS. CY 1977 and 1978 DENIED APPLICANTS

The second second

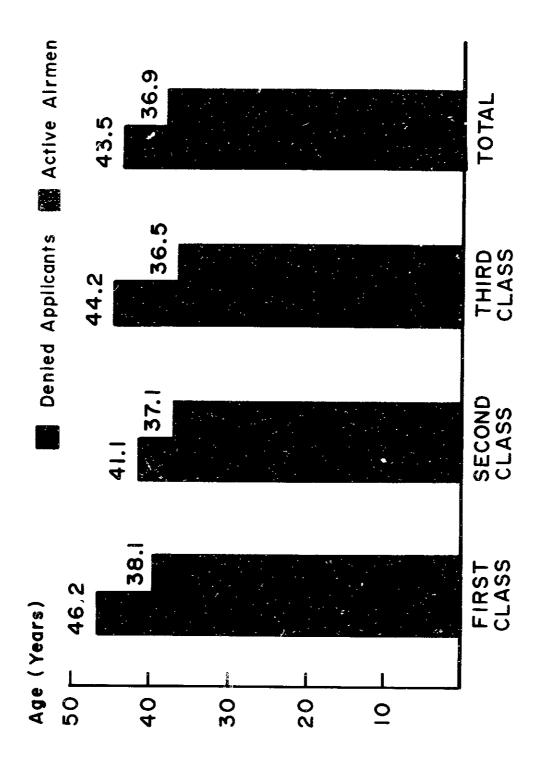
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The second secon

					Second Class	784		Third Class	88		10101	100
		First Ciass	I		2000	Annual Age			Annual Age	•	•	Annual Age
	Dented	Active	Specific	Denied	Active	Specific	Dented	Active	Specific	Denied	Atrmen	Denial Rate**
Ann Cround	Afrinan	Atrmen	Denial Rate**	Airmen	Atrmen	Denial Rate**	Airmen	Alrmen	ואווומז עמרכ			
a orone			9	55	5.850	6.7	231	25,978	4.4	301	33,330	4.5
Less than 20	12	1,502		?	200		363	070 19	4.4	905	97,885	9.4
20-24	34	6,107	2.8	332	30,729	**	330	640 10	·		101 000	<b>v</b>
	7.0	10 382	<b>a</b> ;	463	50,603	4.6	613	62,146	6.9	1,113	123,131	7
67-67	à :	200 01		181	59.855	2.3	949	56,439	5.7	979	133,544	3.7
- 34	Å	17,230	•		2006.20		610	67.561	6.4	926	109,168	4.2
-39	63	15,845	2.0	253	70/105	0.7		****		120	200	α,
3	44	12, 163	2.7	295	40,408	3.7	710	39,731	6.6		100 116	
7 7 1	00 ;	50111		¥ 6	063.00	6.0	1.012	43,881	11.5	1,453	81,730	6.00
67-	98	8,1/9	r:1	200		† ! •			7 31	1.713	65.528	13.1
-5.4	155	5.976	13.0	368	20,853	80,	1,190	38,099	13.4	?		: :
		010	•	368	17.266	10.7	879	23,270	18.9	1.427	.16'95	15.2
55-59	ORT 1	0,2,0	i .	2 -	6 44.3	8.11	557	11,105	25.1	737	19,084	19.3
-64	28	1,53/	1.6	761	1110				21. 3	111	6,363	26.2
65-69	7	225	15.6	67	2,003	16.7	607	C1 4				- 60
70 and older	- 47	67	40.8	23	197	14,4	125	1,763	35.5	152	7,609	1.67
		103	٦. ٧	3.012	310,238	6.4	7,366	415,757	6,8	11,107	811,588	6.8
TOTAL	67/	65, 59	7									

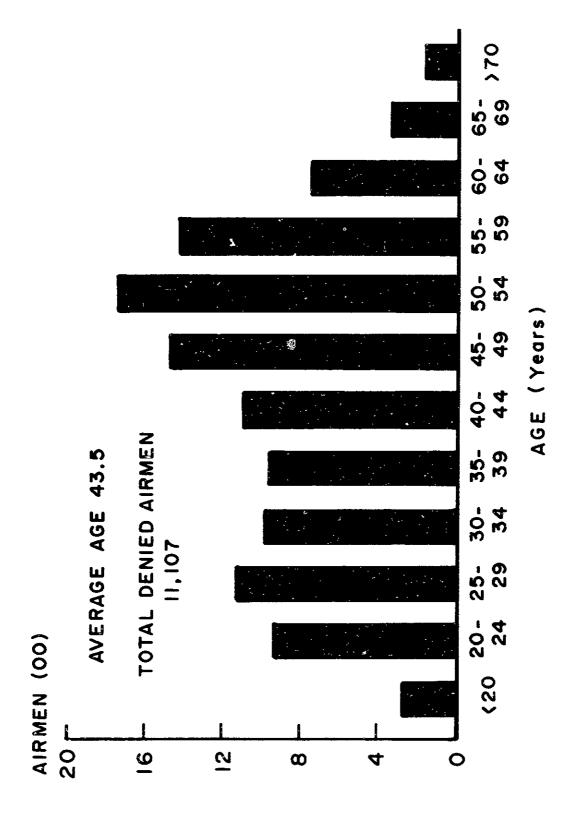
\* Age as of date of examination to last birthday for denied airmen; age at last birthday as of December 31, 1977, for active airmen.

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Average age of denied applicants compared with active airmen, 1977-1978. Figure 3.



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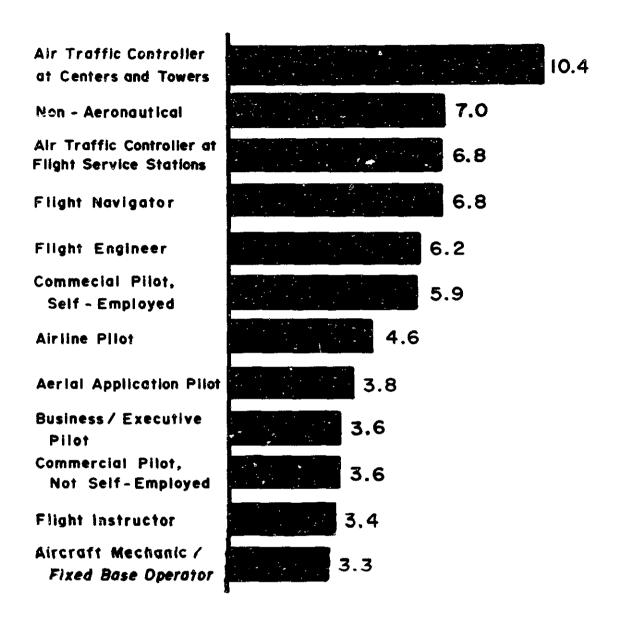
Figure 4. Age distribution of denied applicants, 1977-1978.

TABLE III. CY 1977 and 1978 DENIED APPLICANTS BY OCCUPATION AND CLASS OF MEDICAL CERTIFICATE APPLIED FOR\*

The second second

	First	ı	Second	Second	Second Class Engineer/	Second Class Commercial	Second Class Pvt. or Stu. Pilot/ATC	Third Cless Private	Third Class Student	Total Denied Airmen	Total Active Airmen**	Annual Rate per 1,000 Applicants
Occupation Pilot, First-Class	Class	Class	ATC-CIV/FAA	AIC-HITTERIA	THE STATE OF THE S	-		,	1	346	37,610	9.4
Airlines Only	345	-	ı		l	•			:	ž	665.7	6.2
Flight Engineer	•	•	•	,	87	1	1	,	1	₹	1771	
Fiight Navigator/ Radio Operator	-	1	•	•	ı	,	•	ı	1	-	74	6.8
Pilot, Business or Executive	131		•	,	ı	ı	•	1	•	134	18,586	3.6
Commercial Pilot, Salf-Employed	ι	37	•	,	·	•	ı	•	•	37	3,127	6.5
Commercial Pilot, Not Self-Employed	•	76	,	ı	ı	i	1	1	•	76	13,096	3.6
Aero Application		56	•	•	•	t		•		27	ų, Š	3.8
Air Traffic Controller/ Centers, Towers	2 2	۰	554	85	,	79	79	ı	7	192	38, 196	10.4
Air Traffic Controller/ Flight Service Station	ler/ ition ~	-	17	1	,	ç	٥	•	1	63	4,607	8.9
Plight Instructor	13	37	7	•	1	-	•		•	Σ.	7,925	4.6
Aircraft Machanic/Pixed Same Operator	1xed 2	19	æ	ı	1	•	ı	'n	-	30	4,558	3.3
Nonseronautical or Not Given	230	1,878		m	7		,	3, 184	4.174	9,474	675,690	7.0
TOTAL	729	2,105	609	68	20	11	88	3,189	4,177	11,10/	11,10/ 811,388	9:0

<sup>#</sup> Blocks 9A,and B, FAA Form 8500-8, determine class applied for. \*\* As of December 31, 1977.



Annual Rates per 1,000 Applicants

Figure 5. Annual denial rates by occupation, 1977.

# D. Total Flying Time of Denied Airmen

Flying time data further emphasize the contribution of new applicants to total denials. Table IV and Figure 6 show total civilian flying time as recorded by the applicant on his denied application for medical certification. Forty-nine percent of the denied airmen indicated less than 40 hours total flying time (the number of hours required for a private pilot's license). Thirty percent of these airmen indicated no flying time. Of course, of these airmen indicating no hours flown, as many as 698 are strictly air traffic controllers (see Table III). However, if the 698 controller denials are subtracted, the remainder still indicates that new pilot applicants are the major contributor to total denials. The "less than 40 hours flying time" category still equals 42.5 percent when the "air traffic controller only" figure is subtracted.

The next largest percentage of denials occurs at the "more than 1,000 hours" interval (19.0 percent), followed by the "100-299 hours" interval (12.4 percent).

# E. Medical Characteristics of Denied Airmen

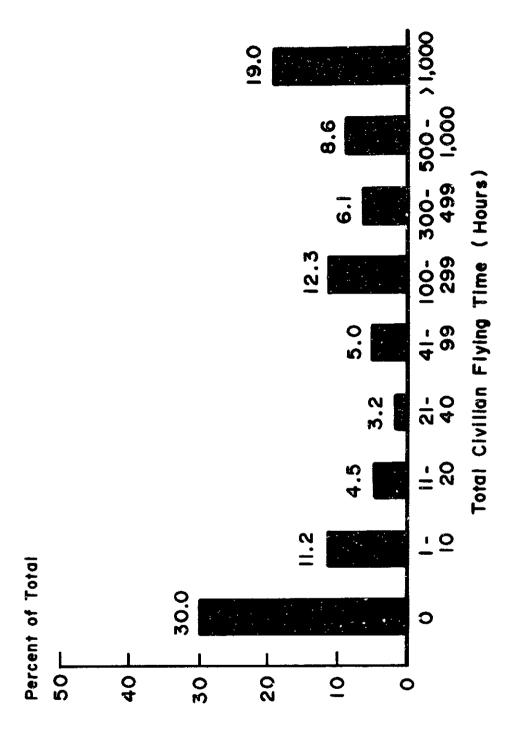
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Tables V and VI and Figure 7 provide annual cause-specific denial data, per 10,000 applicants, by class of medical certificate applied for and sex. In Table V, one can observe an increasing overall denial rate for third class over second class and for second class over first class. This is also true for the cause-specific rates in the Eye, Abdominal, Muscles, and Miscellaneous categories. In the Ear, Nose, Throat, and Mouth category second-class rates are larger than the first- and thirdclass rates; and, in the Bones and Joints category the firstclass rates are larger than the third- and second-class rates. In the Respiratory, Cardiovascular, and Neuropsychiatric categories, third-class rates are largest, with first-class rates next and the second-class rates lowest. The most significant causes for denial (regardless of class applied for) are cardiovascular (with an annual denial rate of 35.9 per 10,000 applicants); the miscellaneous category, which includes endocrinopathies, general systemic conditions, use of disqualifying medications, and administrative denials for failure to provide additional medical information (with an annual denial rate of 28.2 per 10,000 applicants); and neuropsychiatric (with an annual denial rate of 13.3 per 10,000 applicants). Eye pathology is next in importance at a substantially lower rate. These findings are essentially the same as the findings in the study of 1975/1976 applicants (4).

TABLE IV. CY 1977 and 1978 DENIED APPLICANTS
BY TOTAL RECORDED FLYING TIME

Total Flying Time* (Hours)	Number Denied	Percent of Total
0	3,332	30.0
1 - 10	1,247	11.2
11 - 20	493	4.5
21 - 40	353	3.2
Subtotal	5,425	48.8
41 - 99	563	5.0
100 - 299	1,375	12.4
300 - 499	682	6.1
500 - 1,000	949	8.6
More than 1,000	2,113	19.0
Subtotal	5,682	51.2
TOTAL	11,107	100.0

<sup>\*</sup> The total civilian flying time recorded in Block 16, FAA Form 8500-8, determines total flying time.



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Figure 6. Recorded flying time of denied applicants, 1977-1978.

TABLE V. CAUSE FOR DENIAL OF CY 1977 and 1978 DENIED APPLICANTS BY PATHOLOGY SERIES AND CLASS OF MEDICAL CERTIFICATE APPLIED FOR

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								Total
	P. C.	First Class	Sec	Second Class	[H]	hird tiass	Cause For	Annual Rate per
	Cause For	Annual Rate per	Cause For	Annual Rate per	Cause For	10,000 Applicants	Denial*	10,000 Applicants
Series Series	Den1a1*	10,000 Applicants	Denial	10,000 Appitents		, ,	AIR	5.0
Total and a second and a second as a secon	:		177	3.9	548	0.0	2	
Eye	53				86	1.2	231	7.1
Far. Note. Throat, and Mouth	27	1.6	100	-		đ	121	0.7
	91	0.6	33	0.5	9/	6.5	: ;	ć
Respiratory	:		070	20.1	761 7	50.4	5,830	6.00
Cardiovaccular	387	72.6	1,447		260	3.1	409	2.5
	30	1.8	118	÷:			7 153	13.3
	į	o o	603	8,6	1,378	0.01	7,117	
Meuropsychiatric	0/1	٠.,	3	4	62	0.7	131	8.0
Bones and Joints	29	1.7	0			7 0	20	0.3
Muscles	2	0.1	91	0.2	7.			
Miscallaneous (Disquelifying								. 00
Medication, Endocrin-		13.6	1.050	16.9	3,287	39.5	4,570	7'07
opathies, etc.)	617		•	,	,,,,	3 611	14.312	86.2
TOTAL	917	53.6	3,458	55.7	16646			
								•

\* Refers to distinct pathological conditions cited as cause for denial. . Data do not represent airman applicants; however, most are denied for a single cause. Some applicants are denied for administrative reasons, e.g., failure to provide required ancillary or history data, may not have a specific pathology code assigned.

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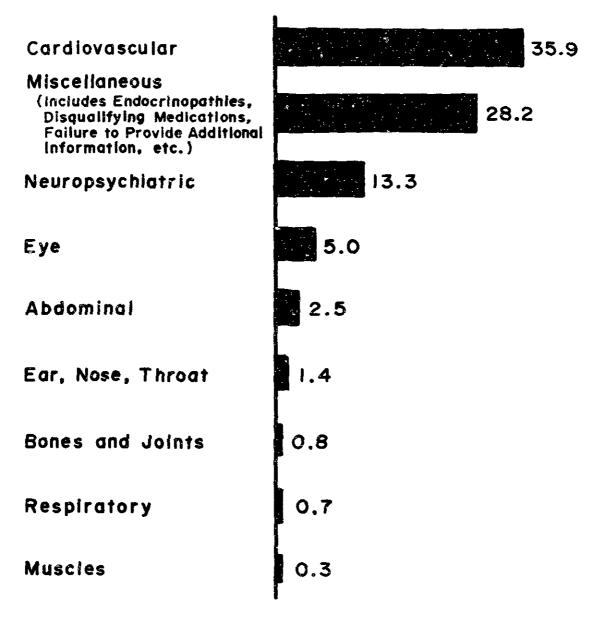
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CY 1977 and 1978 DENIED APPLICANTS BY PATHOLOGY SERIES AND SEX TABLE VI.

والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة والمراجعة	Male*	e*	Fen	Female*
		Annual Rate		Annual Rate
Pathology Series	Cause For Denial**	per 10,000 Applicants	Cause For Denial**	per 10,000 Applicants
Еуе	707	4.6	111	11.2
Ear, Nose, Throat, and Mouth	220	1.4	11	1.1
Respiratory	118	0.8	٣	0.3
Cardiovascular	5,679	37.3	151	15.2
Abdominal	390	2.6	18	8.
Neuropsychiatric	1,964	12.9	189	19.1
Bones and Joints	123	8.0	∞	9.0
Muscles	77	0.3	9	9.0
Miscellaneous (Disqualifying Medication, Endocrinopathies, etc.)	4,280	28.1	290	29.3
TOTAL	13,525	88.7	787	79.4

\* Active airman population by sex (male--762,059, female--49,529) as of December 31, 1977.

<sup>\*\*</sup> Refers to distinct pathological conditions cited as cause for denial. Does not represent airman applicants; however, most are denied for a single cause.



# Annual Rates per 10,000 Applicants

Figure 7. Cause for applicant denial by major body system (Pathology Series), 1977-1978.

Use of disqualifying medication and administrative denials for failure to provide additional medical information represent a large portion of the denials in the miscellaneous pathology category. Of the 4,570 denials in this category, 2,022 or 44 percent were for use of disqualifying medication and 1,464 or 32 percent were for failure to provide additional medical information.

Overall highest cause for denial was use of disqualifying medications (miscellaneous pathology category); second was hypertension with medication (cardiovascular); third was administrative denials for failure to provide additional information (miscellaneous); and fourth was myocardial infarction (cardiovascular). As shown in Table VI, cause for denial by sex indicates that males were most frequently denied for cardiovascular reasons, second for miscellaneous causes, and third for neuropsychiatric reasons. Females, however, were most often denied (37 percent) for miscellaneous causes (the majority of denials in this category were for use of disqualifying medication (48 percent) and for failure to provide additional information (30 percent)), followed by neuropsychiatric reasons, then cardiovascular reasons. These findings are the same as in the previous study of 1975/1976 applicants (4). For all denied applicants, four pathology categories (cardiovascular, miscellaneous, neuropsychiatric, eye) account for more than 90 percent of all denials.

## SUMMARY

This study of CY 1977 and 1978 applicants has provided comprehensive data reflecting pertinent denial rates with respect to the medical and general attributes of those airmen denied FAA medical certification. A similar study is planned every 2 years to monitor any changes in the epidemiologic findings concerning denied airman applicants.

As of December 31, 1977 (the midpoint for the denied applicant group), there were 811,588 active certified airmen. In CY 1977 and 1978, 11,107 airman applicants were denied medical certification, resulting in an overall denial rate of 6.8 per 1,000 applicants. By class of certificate applied for, the denial rate was 4.3, 4.9, and 8.9 per 1,000 applicants for first, second, and third class respectively.

As expected, the mean age of the denied airman group was higher (by 6½ years) than the mean age of the active airman population group but was consistent with previous findings.

Age-specific denial rates for the younger age intervals were higher than for the 30-34 and 35-39 age intervals. This can be attributed to new applicants who had not been previously screened by the FAA.

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As anticipated, general aviation (third-class) applicants contributed greatly to total denials, reflecting again that new applicants are being screened for the first time. Eighty-five percent of all denied applicants indicated nonaeronautical occupations on their applications. Of the professional categories, the air traffic controller at center/tower and the air traffic controller at flight service station groups had the highest denial rates, with 10.4 and 6.8 per 1,000 applicants. Airline pilots were sixth highest of the occupationally connected airmen with a rate of 4.6 per 1,000 applicants.

Total flying time data also substantiated the contribution of new applicants to total denials with 49 percent of the denied applicants indicating less than 40 hours of total flying time and 30 percent indicating no flying time.

For denials by pathology, an increasing overall denial rate for third class over second class and for second class over first class was observed. The most significant causes for denial (regardless of class applied for) were cardiovascular, miscellaneous pathology, neuropsychiatric, and, at a substantially lower level, eye pathology. These four categories are involved in 93 percent of all denials.

Cardiovascular causes resulted in the highest denial rate for males, while the miscellaneous pathology category provided the highest denial rate for females, mainly contributed to by use of disqualifying medication and failure to provide additional information.

Overall, the highest cause for denial was use of disqualifying medications (miscellaneous pathology category); second was hypertension with medication (cardiovascular); third was administrative denials for failure to provide additional information (miscellaneous); and fourth was myocardial infarction (cardiovascular).

Epidemiologic findings are consistent with expectations and previous findings on denied airmen.

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